What is claimed is:

1. An electronic circuit for detecting measured quantities, including:

- at least one sensor unit (110) for generating an analog measurement signal, which represents a measured quantity detected by the sensor unit (110);
- a signal detecting unit (120) with a first analog/digital converter (121) for digitizing the analog measurement signal; and
- a voltage supply unit (130) that has a first voltage source (132) for producing a first supply voltage (VS1) with an imprecision x1 for the sensor unit (110) and has a second voltage source (134) for producing a second supply voltage (VS2) with an imprecision x2 for the signal detecting unit (120), the imprecisions x1, x2 being transmitted to the measurement signal,

wherein

the signal detecting unit (120) has a correction unit (127) that compensates for the effects of the imprecisions x1 and/or x2 on the digitized measurement signal in response to a digitized voltage signal (U) representing the imprecision x1 of the first supply voltage, and emits a compensated digitized measurement signal (M) resulting from the compensation.

2. The electronic circuit as recited in claim 1,

wherein the correction unit (127) includes:

- a first memory element (127a) for storing output values of the first analog/digital converter (121),
- a second memory element (127b) for storing values of the digitized voltage signal (U),
- a normalization unit (127d) for generating a normalization factor (N), which is derived from the contents of the two memory elements (127a, 127b) and represents a complement to the imprecisions x1 and/or x2; and
- a multiplying unit (127c) for generating the compensated digitized measurement signal (M) by multiplying the contents of the first memory

element (127a) by the normalization factor N, with a delay element (127e) that delays the supplying of the content of the first memory element to the multiplying unit (127c) by the amount of time that it takes to calculate the normalization factor N.

3. The electronic circuit as recited in claim 2,
wherein the normalization unit (127d) calculates the normalization factor N as follows: N = content of the first memory element/content of the second memory element.

4. The electronic circuit according to one of the preceding claims, which – if the first supply voltage (VS1) is greater than the second supply voltage (VS2) – is characterized by:

- a first voltage divider circuit (R1, R2) for generating the voltage signal (U), which represents the imprecision x1 of the first supply voltage (VS1), through division of the first supply voltage (VS1), preferably in a ratio such that the voltage signal (U) corresponds quantitatively to the second supply voltage (VS2); and
- a second analog/digital converter (122) that is operated with the second supply voltage (VS2) and is for digitizing the voltage signal (U), the second analog/digital converter (122) being preferably associated with the signal detecting unit (120).

5. The electronic circuit according to one of claims 1 through 3, characterized by a second signal detecting unit (120′) that is operated with the first supply voltage (VS1) and includes a third analog/digital converter (122′) that digitizes the second supply voltage (VS2) to generate the voltage signal (U), which represents the imprecision x1 of the first supply voltage (VS1), the third analog/digital converter (122′) likewise being operated with the first supply voltage (VS1).

6. The electronic circuit according to one of the preceding claims, wherein – if the first supply voltage (VS1) is greater than the second supply voltage (VS2) – the sensor unit (110) has a characteristic curve limitation unit (112) for limiting the output voltage of the sensor unit (110) to the level of the second supply voltage (VS2).

7. The electronic circuit according to one of claims 1 through 5, characterized by a second voltage divider circuit (140′, 140″, and 140‴) for dividing the measurement signal generated by the sensor unit (110) before it is output to the first analog/digital converter (121).

8. The electronic circuit as recited in claim 7, wherein the second voltage divider circuit (140′) has a voltage divider (R3′, R4′) connected between the output of the sensor unit (110) and ground, with a pickup point (142′) that is connected to the input of the first analog/digital converter (121) of the signal detecting unit (120).

9. The electronic circuit as recited in claim 7, wherein the second voltage divider circuit (140″) has a pull-down impedance (R5″) connected between the output of the sensor unit (110) and ground and, parallel to this, has a voltage divider (R3″, R4″) with a pickup point (142″) that is connected to the input of the first analog/digital converter (121).

10. The electronic circuit as recited in claim 7, wherein the second voltage divider circuit (140‴) has a pull-up resistance (R5‴) connected between the output of the sensor unit (110) and the first supply voltage (VS1) and has a voltage divider (R3‴, R4‴) connected between the output of the sensor unit (110) and ground, with a pickup point (142‴) that is connected to the input of the first analog/digital converter (121) of the signal detecting unit (120).

11. A method for operating an electronic circuit for detecting measured values as recited in claim 1, in particular for operating its correction unit to compensate for imprecisions x1 and/or x2 in a digitized measurement signal, including the following steps:

- storage of a value of the digitized measurement signal (M) at time n;
- storage of a value at time n of a voltage signal (U) that represents the imprecision x1 of a first supply voltage (VS1);
- calculation of a normalization factor N by dividing the value of the digitized measurement signal at time n by the value of the voltage signal (U) at time n; and
- generation of a compensated digital measurement signal (M) by multiplying the normalization factor N by the value of the digitized measurement signal at time n.

12. A computer program for an electronic circuit for detecting measured values,
characterized by a program code, which is suitable for carrying out the method as recited in claim 11 when it is executed by a computing unit, in particular a microcontroller in a control unit.

13. The program code as recited in claim 11,
wherein the program code is stored on a data medium that is readable by a computer.